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CATTLE LICE:
HOW TO CONTROL THEM

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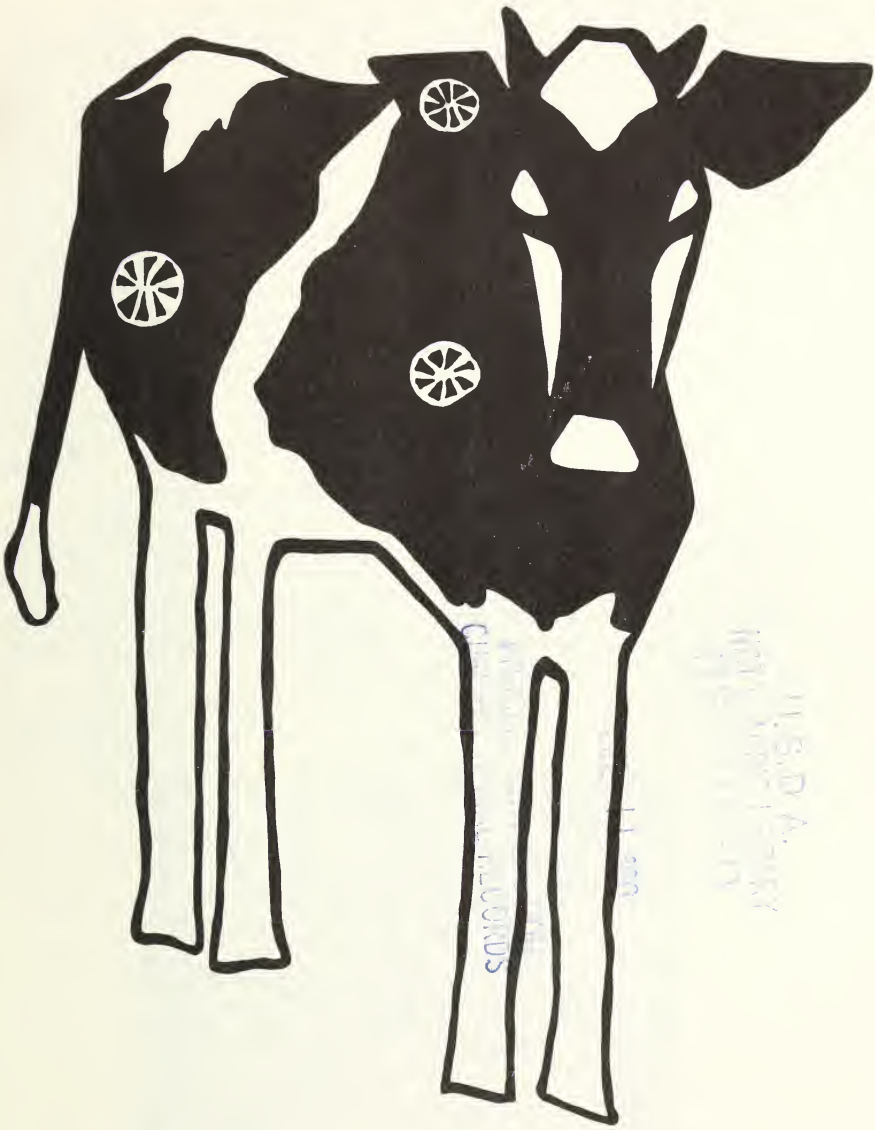

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CATTLE LICE:
HOW TO CONTROL THEM

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Cattle in most sections of the United States are attacked by three species of sucking lice and one species of biting lice. Lice spend their entire life on the host (they do not live long off a host) and, when found in large numbers, can be serious pests of dairy and beef cattle. Highest populations of lice are found on cattle in the winter, especially in the northern States, when cattle have long-haired coats. Cattle may need to be treated with insecticides to kill lice that cause such losses as decreased weight gains or milk production, decreased efficiency of feed conversion, and possibly even death of the infested animal.

Heavy infestations of biting lice in cattle cause a scruffy appearance, loss of hair, and a general unthrifty condition. Lousy animals rub and scratch themselves because of the intense irritation and lick and bite at infested areas. These actions often cause hair to be rubbed off and create raw, red areas on the skin.

Sucking lice also cause a scruffy appearance in cattle, and high populations may create an anemia (see fig. 1). Heavily infested cattle are weakened by blood loss, which may lead to poor condition, greater susceptibility to diseases, or death.

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Lice and How They Live

Biting Lice

Biting lice have chewing mouthparts and live off skin scales, epidermis, hair, and other surface materials. Females cement eggs (called nits) to hairs. The immature forms that hatch from eggs become adults after several weeks and several molts. Mating occurs on the host. The small [1/16- to 1/8-inch

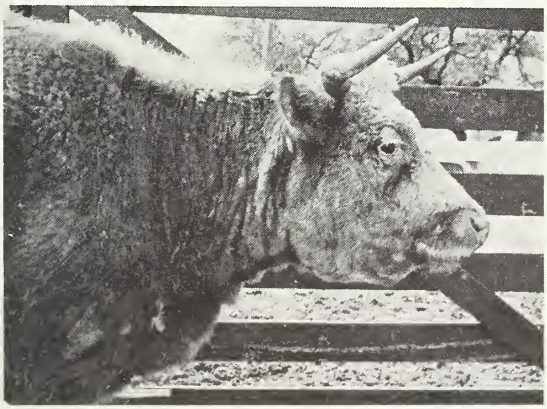

Fig. 1 Hereford cow heavily infested with shortnosed sucking lice. PN 6736

(1.5 to 3.1mm) long], pale-yellow, amber-colored biting lice usually are found in patches on the neck, shoulders, base of the tail, and withers of cattle. Infested areas may show loss of hair, scruffy appearance and, in heavy infestations, raw, damaged tissues.

The cattle biting louse, *Bovicola bovis* L. (fig. 2), is the only species of biting louse on cattle.

Sucking Lice

Sucking lice have long, piercing mouthparts that penetrate the skin to suck blood. Females cement eggs (nits) to hairs. The immature stages (nymphs) that hatch from eggs also suck blood and, after several weeks and several molts, become adults. Mating occurs on the host. Three species of sucking lice are fairly common throughout the United States, and one species has been reported only from Texas, Alabama, Florida, and Puerto Rico.

The longnosed sucking louse, *Linognathus vituli* (L.) (fig. 3), can be found on the dewlap and shoulders of infested animals but may be common on the face (around the eyes and muzzle), neck, rump, body, and belly; in heavy infestations, it may be found on all parts of the body. These medium-sized [1/8-inch (3.1 mm) long] lice have a bluish-black color, an elongated oval shape, and a long rostrum (or "nose").

The little blue louse, *Solenoptes capillatus* (Enderlein), usually is found on the neck and head of infested cattle and also on the rump or shoulders and dewlap. These dark blue lice are smaller [1/16- to 1/8-inch (1.5 to 3.1 mm) long] than the other sucking lice. They often are found in small clusters rather than diffusely spread over the surface of the skin.

The louse most destructive to cattle is the shortnosed cattle louse, *Haematopinus eurysternus* (Denny). (See figure 4.) This large [1/8- to 3/16-inch (3.1 to 4.7 mm) long], almost round, grayish-black louse can be found in large numbers, especially on the face, top and sides of the neck, dewlap, backline, tail, escutcheon, and pole. Heavily infested cattle have lice on all parts of their body.

The cattle tail louse, *Haematopinus quadripertusis* Fahrenholz, is the sucking louse found only in Texas, Alabama, Florida, and Puerto Rico. This species is similar in appearance to the shortnosed cattle louse although the cattle tail louse is somewhat larger. The cattle tail louse usually is found only on the brush or switch of the tail where adult females lay eggs, but many immature forms also may be found around the eyes, on the eyelids, and in the ears of cattle.

Fig. 2. Biting louse.

Fig. 3 Longnosed sucking louse.

Fig. 4. Shortnosed sucking louse.

Control of Lice

Application Methods

The most common method of applying insecticides to cattle for the control of lice is to spray cattle thoroughly with an emulsifiable concentrate or wettable powder of an insecticide mixed thoroughly with water. Because lice are found on cattle in the winter when most cattle have heavy coats, 2 to 4 gallons (7.5 to 15.1 L) of spray per animal may be necessary to thoroughly wet the animals. Thorough treatment—spraying a few animals at a time with adequate volume, pressure, and coverage—is needed for louse control. Cattle with short-haired coats may be wetted with only 2 to 4 quarts (2.2 to 4.4 L). A spray pressure of 100 to 200 pounds per square inch (7 to 14 kg/cm^2) is necessary. Cattle also may be treated with a mist spray in which a ready-to-use formulation of insecticide is applied to cattle as a fine mist at the rate of 3 to 4 ounces (90 to 120 mL) per animal.

Where dipping vats are available, cattle can be treated thoroughly by immersing them completely in insecticides in dipping vats. Dipping vats must be managed so that insecticides are maintained at adequate strength by proper replenishment of insecticide or water, or both; debris, manure, and other materials do not foul the vat so that it becomes ineffective; and vat fluids are agitated thoroughly to assure proper mixing of insecticides before animals are dipped. Only insecticide products especially designed for vats should be used for dipping cattle. Other products may not have the same qualities of dispersion and stability that are essential for a dipping-vat formulation.

Spray-dip machines are portable boxes in which cattle are treated individually in a spraying chamber with insecticides applied through several spray nozzles to all parts of the body and excess spray is collected in a tank beneath the spraying chamber. If properly used, these machines treat cattle thoroughly. Cattle should be treated for 15 to 20 seconds for complete coverage. Collected runoff is filtered and resprayed onto cattle.

Pour-on treatments are ready-to-use preparations or emulsifiable concentrates diluted with water that are poured onto the backline of cattle at rates of 1/2 or 1 ounce (15 or 30 mL) of finished material for 100 pounds (45 kg) of body weight. The material is poured evenly along the backline to minimize the runoff of material. A second pour-on application may be necessary for complete louse control.

Spot-on treatments consist of ready-to-use solutions of insecticides that are applied to a single spot on the backline of cattle. Spot-on treatments are applied at a special low rate of 0.13 ounce (4 mL) per 100 pounds (45 kg) body weight.

Dusts may be spread by hand application or by self-application in dust bags to cattle. For hand application, the animal is dusted thoroughly with a specific amount of dust by use of a shaker can or any suitable mechanical dust applicator. The dust should be rubbed lightly into the hair. For self-application, dust is placed in burlap or canvas dust bags that are hung around areas frequented by cattle. Bags should be hung so that cattle can brush against them or hit them and thus treat themselves. To insure treatment, dust bags should be placed in doors, alleyways, or openings leading to watering places, mineral stations, or buildings used by cattle. Bags placed in these places will force cattle to use them daily.

Backrubbers usually are constructed of burlap or other materials tied around a chain or cable. Emulsifiable concentrates or solutions of insecticides diluted with

diesel fuel or light motor oil (do not mix with *used* motor oil), or insecticides available in a ready-to-use backrubber oil, are applied to livestock oilers, backrubbers, or other rubbing devices. Backrubbers should be situated around pens, watering sites, and loafing areas so that cattle will rub against them and thus treat themselves with the insecticide. Backrubbers must be kept constantly charged with insecticide; lice can be controlled by this method only when cattle use backrubbers continuously.

Insecticides

Effective insecticides include a variety of products that are registered with the Environmental Protection Agency (EPA) for application to cattle for the control of lice. Effective insecticides and treatments include coumaphos as a dust, spray, or dip; crotoxyphos as a spray; crotoxyphos plus dichlorvos as a spray or mist spray; dioxathion as a spray, dip, or backrubber; dioxathion plus dichlorvos as a spray, dip, or backrubber; famphur as a pour-on; fenthion as a spot-on or pour-on; lindane as a spray or dip; malathion as a spray, dust, or backrubber; methoxychlor as a spray, dip, or dust; methoxychlor plus malathion as a dust; methoxychlor and toxaphene as a dust; phosmet as a spray, dip, or pour-on; ronnel as a spray or backrubber; stirofos as a spray or dust; stirofos plus dichlorvos as a spray; toxaphene as a spray, dip, or backrubber; toxaphene plus lindane as a spray, dip, or backrubber; toxaphene and malathion as a spray, dip, or backrubber; and trichlorfon as a pour-on.

Precautions

All insecticides (all pesticides in general) are toxic to humans and cattle and require special care in their application. Use only those formulations of insecticides that are registered for use on livestock. Formulations that contain the same insecticide but are registered for use on plants or on structures that house livestock must not be used for livestock. The instructions on the label of the insecticide container must be followed *strictly*. Labels contain clearly written, specific information on the crop, animal, or site to which the product is to be applied; specific pests controlled by the product; how, where, and when the product should be applied; and equipment requirements. The label also contains precautionary information on limitations as to use on dairy cattle, interval between treatment and slaughter or freshening, treatment of cattle under a specific age, and other information. The label gives information on poisoning symptoms and recommended antidotes and instructions on storage and disposal of the container. The *prime* source of information about an insecticide and its use is the label.

Cattle to be treated must be handled carefully. Adequate shade and fresh drinking water should be available. Cattle should be treated before they become hot and tired. As treatment creates a stress on each animal, treated cattle should not be subjected to such forms of stress as sickness, shipping, or other treatments such as dehorning, castration, administration of anthelmintics, or vaccination. Calves under 3 months of age usually should not be treated or should be treated with special care if treatment is absolutely necessary. If insecticide poisoning occurs, consult a veterinarian at first signs of adverse reaction. These signs include depression, nervous excitement, muscle tremors, excessive salivation, diarrhea, stiffness of limbs, and convulsions.

Insecticides that are hazardous to cattle are also hazardous to the persons who apply them and others that may come in contact with them. Some safety rules to follow when working with insecticides are:

1. Mix and prepare insecticides in an open or well-ventilated place.
2. Avoid spilling concentrates on the skin or clothes. If any is spilled, wash the skin with soap and water and change contaminated clothing immediately.
3. Wear rubber gloves and respirators (if required) when handling concentrated insecticides.
4. When applying insecticides, use a respirator or protective clothing, or both, if the label prescribes them.
5. Do not smoke, eat, or drink while applying insecticides.
6. At the end of the application, bathe, and change all clothing. Launder the clothing before wearing it again.
7. Store all insecticides in original containers. Dispose of empty containers so that they will not create hazards to life or the environment.
8. Do not store insecticides with other chemicals, with food, or where they can be reached by children, animals, or unauthorized persons.

All application equipment must be maintained in good mechanical condition. All worn parts should be replaced immediately, and special attention should be given to valves, nozzles, connections, and pumps. All equipment should be calibrated accurately.

The environment must be protected from contamination by insecticides. Situate dipping vats or spraying pens in areas where the excess insecticide will not contaminate such water sources as wells, cisterns, lakes, or streams.

Use of Pesticides

Pesticide use is governed by a Federal law which is administered by the Environmental Protection Agency. This law requires manufacturers to register pesticides and makes it illegal for people to use them except in accordance with the instructions on the label.

You may, if you wish, use *less* of any pesticide than the maximum amount the instructions permit. However, always remember: 1) Be sure the pesticide comes in contact ONLY with plants or areas you intend to spray; and 2) be sure to spray the pesticides uniformly. You can always get reliable, free information about any pesticide by calling your Cooperative Extension Service, your State agricultural experiment station, or your county agent.

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